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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/892,954	06/27/2001	Nicole S. Carpenter	BUR920000141US1	3823

29505 7590 05/05/2003

DELIO & PETERSON, LLC
121 WHITNEY AVENUE
NEW HAVEN, CT 06510

EXAMINER

WINTER, GENTLE E

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 05/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/892,954

Applicant(s)

CARPENTER ET AL.

Examiner

Gentle E. Winter

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 11-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, and energy: sonic; sacrificial coating material: curable polymer in Paper No. 4 is acknowledged.
2. The traversal to the restriction requirement on the ground(s) that "a search pertaining to one of the above-identified groups would necessarily encompass subject matter of the other group and separate searches of each group would be unwarranted and duplicative" has been considered. The arguments are not found persuasive because, while there may be some overlap between the groups, searching the separate inventive groups would be an undue burden on the examiner and would not be "unwarranted and duplicative".
3. The requirement is still deemed proper and is therefore made FINAL.
4. As to the election of species, applicant's assertions effectively overcome the election of species requirement. In asserting that the species are not independent and distinct, applicant stipulates that the species are obvious variants of each other. As such, the search cannot be unduly burdensome, and all the claims of Group I are treated on the merits. See MPEP 809.02(a).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 4,178,188 to Dussault et al. disclosing an apparatus for removing contaminants from a semiconductor wafer by applying a film of liquid solvent to an exposed wafer surface while the wafer is in rotation (centrifugal) and ultrasonic energy is applied to the liquid film (and indirectly to the wafer) and removing the liquid solvent (with entrained contaminants) from the wafer. (Abstract).

6. Claims 1-3, 6, and 10 is rejected under 35 U.S.C. 102(b) as being anticipated by 5,690,749 to Lee (Lee).

7. Lee reads on claim 1 in the following manner. A method for removing contaminate particulate matter (24) from a contaminate particle containing substrate surface (12) comprising the steps of: applying a sacrificial coating of a material (16) to a substrate surface (12) containing undesirable particulate matter thereon (24), which material is to encapsulate and suspend the undesirable particles therein; applying energy i.e. “applying pressure to the tape” (see e.g. column 4, line 25 *et seq.*, especially 40) to the coated substrate to dislodge at least some of the particulate matter (24) from the surface of the substrate into the sacrificial coating (16) such that the particulate matter is partially or fully encapsulated and suspended within the sacrificial

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coating forming a particulate matter containing sacrificial material coating; and removing the particulate matter containing sacrificial material coating from the substrate surface providing a substrate surface having less particulate matter thereon.

8. As to claim 2, disclosing that the substrate is a semiconductor wafer. The same is disclosed throughout, see e.g. column 1, line 1.

9. As to claims 3, 6, and 10 disclosing that the sacrificial coating material is a fluid or a liquid. Fluid encompasses liquid and liquid is construed broadly, as "being neither solid nor gaseous". The adhesive disclosed is flowable, and conforms to the surface to be cleaned. See e.g. figure 7 and relevant associated text.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 7, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and United States Patent No. 5,120,369 to Malotky. Each and every limitation of claims 7 and 8 are disclosed in Lee as set forth above with respect to claim 1, except that Lee apparently fails to explicitly disclose that the sacrificial coating material is a curable polymer, and is formed into a

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film. Malotky explicitly discloses the missing element and provides the motivation for making the combination. Malotky discloses a method wherein a tailor-made polymer film is applied to a surface for the purpose of immobilizing contaminating particles. The polymer is disclosed to take up the undesirable materials by solution, absorption adsorption and hold such undesirable materials in solid suspension with subsequent stripping of the polymeric material. Further, the polymer material is disclosed to preferably be one that is capable of being cross linked and applied by conventional spraying, brushing or other coating mechanisms. Thus the missing elements are disclosed. The artisan would have been motivated to make the instant combination because the lower viscosity polymer will more effectively encapsulate contaminants, and upon curing (crosslinking) securely bind such contaminants, while simultaneously allowing for the removal of the applied polymer and associated undesired particles. See abstract and see e.g. column 2, line 65 *et seq.* and column 4, line 60 *et seq.* As to claim 9, when the polymer is sprayed onto the inclined surface it will inherently flow and, to the extent contaminants are present will pick them up. The artisan would have been motivated to incline the surface to facilitate easier coating, and easier access to the surface.

11. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee and US PGPub 20020189635 to Bodet et al.

12. Each and every limitation of claims 4 and 5 are disclosed in Lee as set forth above with respect to claim 1, except that Lee apparently fails to explicitly disclose the use of sonic energy and vibrational energy. Bodet discloses a method of cleaning a substrate, the method including a first step of applying a solution onto the substrate with the and vibrating the solution/substrate.

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The ultrasonic energy facilitates the release of the deposits from the surface. The artisan would have been motivated to make the instant combination in an attempt to maximize the interfacial contact between contaminants and the cleaner/coating, and with higher viscosity coatings/solutions to ensure better conformal coating.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gentle E. Winter whose telephone number is (703) 305-3403.

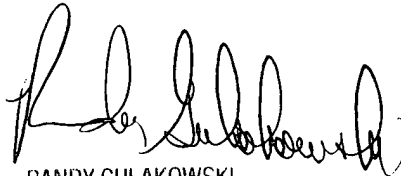
The examiner can normally be reached on Monday-Friday 7:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (703) 308-4333. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications. The direct fax number for this examiner is (703) 746-7746.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Gentle E. Winter
Examiner
Art Unit 1746

May 1, 2003


RANDY GULAKOWSKI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700